



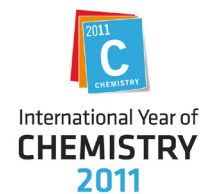
DENISE CAMPBELL

SODIUM

Element Symbol: **Na**

Atomic Number: **11**

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Royal Australian Chemical Institute

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The name, sodium, probably originates from the Arabic word suda meaning headache as the headache-alleviating properties of sodium carbonate or soda were known. The element symbol for sodium comes from the latin word natrium, which refers to the Egyptian word natron which is the name of a mineral salt containing primarily hydrated sodium carbonate. This compound is commonly used in soda ash and baking soda. Although these minerals have been known for hundreds and thousands of years, sodium itself, was not isolated until 1807 by Humphry Davy through the electrolysis of sodium hydroxide (caustic soda).

Sodium is known for the intense yellow colour it gives in flames. This property is utilised in sodium vapour street lighting.

Pure sodium is used extensively in industry as a reducing agent. This reaction, called the Birch Reduction, was first reported in 1944 by the Australian chemist Arthur Birch working in the Dyson Perrins Laboratory in the University of Oxford. He developed the reduction of aromatic rings and is a reaction widely used in synthetic organic chemistry. This reaction enables the modification of steroids. Birch published the first total synthesis of a male sex hormone as the first member of a new structural series. A later member of this series was the first oral contraceptive pill. Birch established the Research School of Chemistry at the Australian National University and was the President of the RACI in 1977-78. He was made a Companion of the Order of Australia in 1987.

Liquid sodium is used in some nuclear reactors to move heat from the reactor core to the steam turbines.

Sodium is one of the most important elements in biology. Sodium cations are important in neuron function and is involved with the osmotic balance between cells and interstitial fluid. The typical human requires approximately 1.5 g of sodium per day. This can be sourced from food rather than added seasoning.

A mixture of sodium chloride, potassium chloride and glucose is given to people suffering severe dehydration cause by diarrhea. This mixture saves millions of childrens' lives in the developing world annually.

Provided by the element sponsor Vicki Gardiner

ARTISTS DESCRIPTION

The ink was chosen to represent the intense colour sodium gives in flames. The suggestion of rings, the structural tower and the life-giving forces of sea and land broadly represent the use and importance of sodium in this modern age.

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